



DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

IK
AO
KO
KT
KA
KN
KAF
KMC

18 APR 2002

DDESB-KT

MEMORANDUM FOR DIRECTOR, U.S. ARMY DEFENSE AMMUNITION CENTER
ATTN: SOSAC-EST

SUBJECT: Request Analysis of Proposed Variant of the Safeload Technical Data Package for
Storage of Mixed Munitions in Approved Conex Containers

The Army has been applying the approved technical data package (TDP) for the Safeload program ("Storage of Mixed Munitions in Approved Conex Containers", dated 25 November 1991, with modifications approved by Department of Defense Explosives Safety Board (DDESB) memorandum of 06 May 1996) to establish a number of explosives storage sites. This allows use of container express (CONEX) and other identified containers to hold up to 500 pounds of bulk Hazard Division (HD) 1.1 explosives plus listed types and amounts of additional explosives items with a reduced inhabited building distance (IBD).

A recent explosives safety site plan submittal has a variant to the TDP and supporting test data: The bulk explosives are stored by themselves in the container.

Discussions with individuals associated with the development of the TDP indicate that having only the bulk explosives in the "middle" of a container does not change the result as long as some stand-off distance is maintained between the bulk explosives and the interior walls.

Request that USADAC ask U.S. Army TACOM-ARDEC Ammunition Research and Development Activity (AMMOLOG) to research, analyze and validate that the premise of Safeload remains valid if only bulk explosives are placed in a container without the other specific ammunition items surrounding them. If the analysis validates this premise to be true then update the TDP to state that bulk explosives (up to 500 pounds) can be stored by themselves, clarify where to place the bulk explosives within a container, and include appropriate minimum separation distance(s) of the bulk explosives from the inside wall of the container.

The DDESB point of contact is Mr. Eric Deschambault, he can be reached at:
commercial phone: 703-325-1369; fax: 703-325-6227; and e-mail:
Eric.Deschambault@ddesb.osd.mil.

/s/ CAPT William E. Wright, USN

WILLIAM E. WRIGHT
Captain, US Navy
Chairman

cc: AMMOLOG (Mr. Scarborough)



DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

06 MAY 1996

IK
AO
KO
KT
KA
KN
KAF
IKs Review



DDESB-KT

MEMORANDUM FOR DIRECTOR, US ARMY TECHNICAL CENTER FOR EXPLOSIVES
SAFETY (ATTN: SIOAC-EST), SAVANNA, IL

SUBJECT: Request for Approval of Modifications to Safeload Program Technical Data Package (TDP)

References: (a) SIOAC-EST (AMSTA-AR-AL/13 Mar 96) (385-16b) 1st End dated 28 Mar 96, same subject as above

(b) AMSTA-AR-AL(70-17b) memorandum dated 20 Dec 95, Subject: Safeload Program to Support the U.S. Army Special Operations Command

(c) AMSRL-WT-TB memorandum dated 16 Jan 96, Subject: Safeload Program to Support the U.S. Army Special Operations Command

The modifications to Safeload TDP entitled: "Storage of Mixed Munitions in CONEX Containers" proposed by reference (a) have been reviewed and are approved based on the information analysis given in references (b) and (c), respectively.

The approved modifications to the TDP include: The application of the TDP developed for container express (CONEX) with internal dimensions (92" long by 72" wide by 70" high, 0.125" thickness corrugated steel walls and floor) is:

a. extended to the following 20' long (external dimensions) containers:

(1) HAZMAT (hazardous materials) containers - Internal dimensions (222" long by 126" wide by 84" high), walls 0.100" thickness corrugated steel, floor 0.125" thickness epoxy coated plywood deck,

(2) MILVAN (military-owned demountable containers) containers - Internal dimensions (232" long by 90" wide by 85" high), walls 0.0787" thickness corrugated steel, hardwood floor, and

(3) ISO (International Standards Organization) containers - Internal dimensions (231" long by 92" wide by 92" high), walls 0.0787" thickness corrugated steel, hardwood floor.

g: wad / conex

③ Wad

b. as long as the following conditions are met:

- (1) All bulk explosives are stored in the middle of the container,
- (2) All other ammunition items are stored at the ends of the containers as far as possible from the bulk explosive, and
- (3) The containers are at least 20' (240") long in external dimension which is automatically satisfied by the containers listed above in sub-paragraph a.

The DDESB technical point of contact for this action is Dr. Jerry M. Ward, phone: DSN 221-8624, Comm (703) 325-2525; fax: (703) 325-6227; E-mail: wardje@ddesb.acq.osd.mil.

/S/ COLONEL W. RICHARD WRIGHT

W. RICHARD WRIGHT
Colonel, USA
Chairman



DEPARTMENT OF THE ARMY
DEFENSE AMMUNITION LOGISTICS ACTIVITY
PICATINNY ARSENAL, NJ 07806-5000

AMSTA-AR-AL (70-17b)

13 MAR 1996

MEMORANDUM THRU Director, U.S. Army Defense Ammunition Center and School,
SMCAC-EST (Mr. R. Davidson), Savanna, IL
61074-9639

FOR Chairman, Department of Defense Explosives Safety Board (DDESB),
ATTN: DDESB-KT (Dr. J. Ward), Hoffman 1, Room 856C, 2461
Eisenhower Ave, Alexandria, VA 22331-0600

SUBJECT: Request for Approval of Modifications to Safeload Program Technical Data
Package (TDP)

1. We request your approval of modifications to the Safeload Program Technical Data Package, "Storage of Mixed Munitions in Conex Containers". The original letter of approval is contained in enclosure 1. The TDP describes a method of storing certain specific mixed munitions in conex containers at reduced quantity distance. The solution was jointly developed by AMMOLOG and the DDESB and is contained in enclosure 2.
2. As a result of requests from several warfighting units, we propose to modify the TDP to also permit the use of certain MILVAN Containers, ISO commercial containers, or commercially obtained hazardous materials (HAZMAT) storage containers. CONEX containers are no longer produced and difficult to obtain. Those which can be located are usually not in servicable condition. We also request permission to include more modern 9 mm ball ammunition along with the currently approved .45 or .50 caliber ball ammunition. The total maximum quantity of rounds (3,160) would not change.
3. The proposed modification has been reviewed by the TDP author, the Army Research Laboratory (ARL). Following a technical analysis, they support extending the TDP to include HAZMAT, ISO, and MILVAN containers as long as the bulk explosive is stored in the middle of the container, the other ammunition items are stored at the ends as far as possible from the bulk explosive, and the containers are at least 20 feet long. Our request for review by ARL is contained in enclosure 3. ARL's response is contained in enclosure 4.

RECEIVED
18 MAR 96

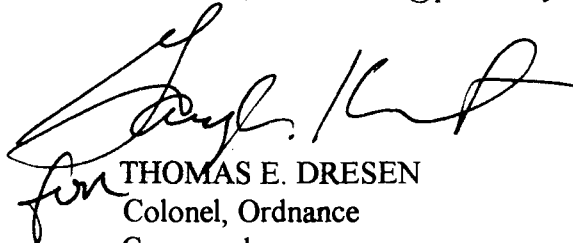
AMSTA-AR (70-17b)

SUBJECT: Request for Approval of Modifications to Safeload Program Technical Data Package (TDP)

4. The Storage of Mixed Munitions in Conex Containers TDP is one of our most requested ammunition storage solutions. Approval of this modification will greatly enhance its usefulness to military units worldwide. During Operation Restore Democracy, the Army's 25th Infantry Division used this TDP, with MILVAN containers, to construct an Ammunition Holding Area in Haiti. Without the TDP, the storage area would have been located in violation of explosives safety standards. A photograph of the construction appears in the article "Logistics in Haiti" in the January/February issue of Army Logistician Magazine. A copy of this article is enclosure 5.

5. The point of contact for this action is Mr. Robert A. Rossi, DSN 880-2188, commercial 201-724-2188, FAX 201-724-5459, email rrossi@pica.army.mil.

5 Encls
as


for THOMAS E. DRESEN
Colonel, Ordnance
Commander,
Defense AMMOLOG Activity

CF:

Commander, U.S. Army Special Operations Command, ATTN: A005

(Roger George) Bldg. #3206, Bryant Hall, Fort Bragg, NC 28307-5200

Commander, DISCOM, ATTN: AMVG-WZM-AO (CW3 Hartberger), APO AE
09320-0090

Director, U.S. Army Research Laboratory, ATTN: AMSRL-WT-TB (Dr. R. Frey),
Aberdeen Proving Ground, MD 21005-5000

DDESB-KT (AMCPM-AL/17 Dec 91) (385[A]) 2nd End Dr. Ward/tm/
325-8624
SUBJECT: Quickload Program Storage of Mixed Munitions Project

Department of Defense Explosives Safety Board, 2461 Eisenhower
Avenue, Alexandria, VA 22331-0600


FOR DIRECTOR, U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL,
ATTN: SMCAC-ESL (MR. C. DOYLE), SAVANNA, IL 61074-9639

96 FEB 1992

1. The Quickload Program Technical Data Package, "Storage of Mixed Munitions in Conex Containers" dated 25 November 1991, prepared by William Lawrence and Robert Frey, US Army Ballistic Research Laboratory, Aberdeen Proving Ground, MD has been reviewed by this office as requested by SMCAC-ESL ((AMCPM-AL/17 Dec 91) (385[A]) refers).

2. Based on the information furnished, the technical data package for the specified mixed munitions storage in conexes up to a net explosives weight of 500 lbs is approved, provided that the inhabited-building distance (IBD) is changed to 360 ft (not the 250 ft proposed). The 360 ft IBD is based on a revised analysis of CONEX trials 9 and 10 performed by Mr. Swisdak, Naval Surface Warfare Center, White Oak, Silver Spring, MD, dated 3 February 1992. The revised analysis is based on a least squares evaluation of the hazardous fragment data in a 10-degree sector directed towards the highest fragment areal number density dispersion. The 360 ft result includes a 20% safety factor to the least squares data fit.

wd all encls


DAVID R. WALLACE
Captain, USN
Chairman